FEED MANAGEMENT

(No. of Systems and AUs Affected)
Code 592

Natural Resources Conservation Service
Conservation Practice Standard

I. Definition

Managing the quantity of available nutrients fed to livestock and poultry.

II. Purpose

This practice may be applied as part of a conservation management system to support one or more of the following purposes:

- Establishes the acceptable criteria and documentation requirements for a plan that addresses the budgeting of nutrients in order to supply the quantity of available nutrients required by livestock and poultry for maintenance, production, performance, and reproduction; while reducing the quantity of nutrients, especially nitrogen and phosphorus, excreted in manure by minimizing the over-feeding of these and other nutrients.

- Improve net farm income by feeding nutrients more efficiently.

III. Conditions Where Practice Applies

This standard applies to:

- Confined livestock and poultry operations with a whole farm nutrient imbalance, with more nutrients imported to the farm than are exported and/or utilized by cropping programs.

- Confined livestock and poultry operations that have a significant build-up of nutrients in the soil due to land application of manure.

- Confined livestock and poultry operations that land-apply manure and do not have a land base large enough to allow nutrients to be applied at rates recommended by soil test and utilized by crops in the rotation.

- Livestock and poultry operations seeking to enhance nutrient efficiencies.

IV. Federal, State, and Local Laws

Users of this standard should be aware of potentially applicable federal, state and local laws, rules, regulations or permit requirements governing feed management. This standard does not contain the text of federal, state, or local laws.

V. Criteria

A. General Criteria Applicable to All Purposes

1. The diets for specific species of animals shall be developed in accordance to recommendations from one of the following:

    - Standards outlined in the most current recommendations of the National Research Council (NRC).

    - Recommendations of the University of Wisconsin.

    - Standards developed by the professional nutritionists of livestock and poultry production companies, feed companies, and/or feed suppliers and accepted by NRCS.

2. Laboratory analysis shall be done on the formulated diet, or on the feed ingredients used to formulate the diet, at adequate frequency to effectively determine its nutrient content.

3. Feed analyses shall be conducted by laboratories whose tests are accepted by the University of Wisconsin. Data from analyzed feed ingredients and/or appropriate historic feed analysis information for the operation will be used for adjustments of ration formulation.

4. Diets and feed management strategies shall be developed by professional animal

scientists, independent professional nutritionists or other comparably qualified individuals.

5. Diets shall be formulated to provide the quantities and correct relative ratios of available nutrients required by the animal species to meet the livestock production and resource protection goals that the plan is based on.

6. Adjustments to nutrient levels shall be provided to meet specific genetic potential, and demands of the production facility environment to insure health, well-being, and productivity of the animal.

7. One or more of the following feed management practices and/or diet manipulation technologies shall be used to reduce N, P, and other excreted nutrients to meet the nutrient management goals established for the operation.

    - Formulating diets closer to actual animal requirements.
    - Reducing protein and supplementing with amino acids (non-ruminants).
    - Manipulating the crude protein and energy (carbohydrate and fat) content of the diet to enhance the availability of amino acids (ruminants).
    - Using highly digestible feeds, as appropriate, in the diet.
    - Using phytase and reducing the supplemental phosphorus content of the diet (non-ruminants).
    - Reducing the phosphorus content of the diet of ruminants when it is being overfed.
    - Using selected enzymes or other products to enhance feed digestibility or feed use efficiency.
    - Using growth promotants as allowed by law.
    - Implementing phase feeding.
    - Implementing split-sex feeding.
    - Using other feed management or diet manipulation technologies that have demonstrated the ability to reduce manure nutrient content.

8. When analysis of manure is done to determine manure nutrient content, the analysis shall be performed by laboratories whose results are accepted by the University of Wisconsin.

VI. Considerations

Additional recommendations relating to design that may enhance the use of, or avoid problems with, this practice but are not required to ensure its basic conservation functions are as follows.

A. Consider nutrient requirements for production based upon stage of growth, intended purpose of the animal and the type of production (e.g., meat, milk, eggs) involved.

B. Consider use of the management practices described in the NRCS Nutrient Management Feed Management Technical Notes for the specific animal species.

C. Consider analyzing the drinking water consumed by the animals to determine its nutrient content, and adjusting the diet to account for this source of nutrients.

D. Consider the effect of different feed ingredients (e.g., by- products) and their potential impacts on the nutrient content of excreted manure.

E. Consider the potential impact of feed management on the volume of manure excreted and on manure storage requirements.

F. Consider the impact of feed management practices, animal management practices, and diet manipulation on manure odors, pathogens, animal health, and well-being.

G. Consider using concentrates and forages grown on the farm to minimize the quantity of nutrients imported to the farm, and to maximize the recycling of nutrients on the farm.

H. Consider analyzing excreted manure or manure from storage facilities to determine manure nutrient content and to estimate the impact of the feeding strategy.

VII. Plans and Specifications

Plans and specifications for feed management shall be in keeping with the requirements of this standard. They shall describe the specific feed management practices and/or technologies that are planned for the operation.

The following components shall be included in the feed management plan:

- The type of technology, or technologies, and/or feeding practices that will be used on the operation.
- Feed analyses and ration formulation information prior to and after implementation of feed management on the operation.
- The estimated, or measured, nutrient content of the manure prior to the implementation of feed management on the operation.
- The estimated impact that feed management will have on manure nutrient content.
- Guidance for how often to collect and analyze feed samples and how often the feed management plan shall be reviewed and potentially revised.
- The quantities and sources of nitrogen and phosphorus that will be fed.
- Identification of the qualified feed management specialist who developed the plan.

VIII. Operation and Maintenance

The producer/client is responsible for the operation and maintenance of the feed management plan. Operation and maintenance activities address the following:

- Periodic plan review to determine if adjustments or modifications are needed.
- Routine feed analysis to document the rates at which nitrogen and phosphorus were actually fed. When actual rates fed differ from or exceed the planned rates, records will indicate the reasons for the differences.
- Maintaining records to document plan implementation. As applicable, records include:
  - Records of feed analysis and ration formulation, including the record of ration formulation used prior to implementing the feeding strategy.
  - Records of the initial estimate of the impact the feeding strategy was expected to have on reducing manure nutrient content.
  - Records of any manure analysis that was done after the feeding strategy was implemented to determine manure nutrient content.
  - Dates of review and person performing the review, and any recommendations that resulted from the review.

  Records of plan implementation shall be maintained for five years, or for a period longer than five years if required by other Federal, state, or local ordinances, program, or contract requirements.

IX. References

National Research Council, Nutrient Requirements of Beef Cattle, National Academy Press, 7th Revised Edition, 2000.

National Research Council, Nutrient Requirements of Dairy Cattle, National Academy Press, 7th Revised Edition, 2001.

National Research Council, Nutrient Requirements of Poultry, National Academy Press, 9th Revised Edition, 1994.

National Research Council, Nutritional Requirements of Swine, National Academy Press, 10th Revised Edition, 1998.